

IN-SEASON AND OUT-OF-SEASON ACADEMIC PERFORMANCE OF SECONDARY
SCHOOL STUDENT-ATHLETES

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The in-season and out-of-season effects of sports participation on academic performance vary depending on the level of play from middle school through collegiate athletics. The purpose of this study was to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of student-athletes in a low-income high school. The number of students participating in high school athletics has continued to rise for 33 consecutive years as increases in the commercialization of high school athletics affect the athletic identities and academic achievement of student-athletes. Little research has been done to examine the effects of in- and out-of-season play on academic performance at the secondary level. This study examined the in- and out-of-season effects on the academic performance of 130 student-athletes in a low-income high school using a repeated measures design. The average semester GPAs of the student-athletes in- and out-of-season were compared using paired samples t-test procedures. The findings yielded positive and statistically significant differences in academic achievement in-season as compared to out-of-season at $p = 0.038$. Suggestions for future research include examining the effects of athletic seasons on academic achievement in individual sports and across ethnic groups, longitudinal studies, and qualitative studies to investigate the perspectives of student-athletes.

Keywords: student-athlete, academic performance, in-season, out-of-season

Dedication

This dissertation is dedicated first and foremost to God, who sent his only son Jesus Christ to die on a cross for my sins and to pay the ultimate price for my salvation. Secondly, this dissertation is dedicated to my wife Stacy and sons Will, Jackson, and Samuel. I hope that this will serve as a reminder that hard work trumps all other limitations. Never be outworked. Lastly, I dedicate this dissertation to my steadfast brothers and sisters in the Armed Forces. Once more!

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List of Abbreviations

Annual Yearly Progress (AYP)

Grade Point Average (GPA)

Grade Weighted Averages (GWA)

High School and Beyond Survey (HBD)

Institutional Review Board (IRB)

National Center for Education Statistics (NCES)

National College Athletic Association (NCAA)

National Federation of State High School Associations (NFHS)

Semester 1 (S1)

Semester 2 (S2)

South Carolina High School League (SCHSL)

Student-athlete Career Situation Inventory (SACSI)

Student-athlete's Climate Survey (SACS)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this study was to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of student-athletes in a low-income high school. Chapter One provides a brief overview of the problem studied. The background includes perspectives gleaned from previous research within historical and social contexts that will provide a foundation to better understand the problem statement and purpose of the study. The significance of the study within a modern-day context supports the research question analyzed throughout the study, and subsequent definitions are provided in this chapter.

Background

Despite the increased popularity of school sports over the last three decades, the effects of participating in school sports on academic achievement among student-athletes are still heavily debated. The in- and out-of-season academic performance of student-athletes varies depending on the level of play from middle school through high school and intercollegiate athletics (Hadfield, 2017; Ritchie, 2012; Schultz, 2015). The effects of in-season play on academic performance transitions from generally positive at the middle school level to generally negative at the collegiate level, making high school athletics a key transition point. This transition point is also significant as more high school students participate in athletics. According to the National Federation of State High School Associations (NFHS, 2017), the number of students participating in high school athletics has risen for 33 consecutive years, and the effects of the commercialization of high school athletics may influence athletic identities and academic achievement.

Historical Background

The general relationship between athletics and academics in educational institutions has been the subject of much research since the beginning of the 20th century. In the early 1900s, females far outnumbered males in public schools, particularly at the secondary level, and the establishment of team sports within public schools was viewed as a potential way to incentivize males to remain in school and to develop leadership skills (Tyack & Hansot, 1990). The relationship between athletic participation and academic achievement began to be studied in the 1930s (Jacobsen, 1931), and public school sports programs became the subject of much scrutiny by social scientists in the 1960s, leading to conflicting viewpoints regarding the relationship between athletic participation and academic achievement. Coleman (1961) argued that athletic activities distract students from academics and are a waste of time. Conversely, Rehberg and Schafer (1968) found conflicts in Coleman's research, and the same data were used to discover that high performing athletes had higher grade point averages (GPA) than the collective student body.

In the 1970s, researchers began examining specific variables within the relationship between athletics and academics. Participating in school sports had positive effects on the development of social skills and academic achievement (Bender, 1978; Picou & Curry, 1974; Taylor, 1973). Hanks (1979) found that participating in high school sports facilitated establishing educational goals and increased the likelihood of attending college. Although the research suggests a generally positive relationship between athletics and academics, by the 1980s researchers began to recognize gaps in academic achievement among student-athletes. In 1984, the Congress of the United States revised athletic eligibility requirements and forced colleges to make educational commitments to athletic recruits in the form of academic supports (Oversight

on College Athletic Programs, 1984). Research by Howard Fetz (1984) supported the findings of the U.S. Congress and further suggested that in addition to narrowing the academic achievement gap, that increasing academic eligibility requirements and educational supports would increase academic motivation, personal initiative, and confidence among student-athletes.

Despite reform efforts in the 1980's, many student-athletes continued to perform at the minimum academic levels required to participate in athletics and most often selected colleges based on their athletic profiles versus their academic achievements (McMillen, 1991). This is supported by research from Foltz (1992) who found that student-athletes in big revenue sports had significantly lower academic achievement than non-revenue sports, and research by Maloney and McCormick (1993) found lower Scholastic Aptitude Test scores among student-athletes compared to the overall student body but significantly lower scores among student-athletes playing revenue sports. Some research attributed this seemingly negative relationship to low academic standards coupled with indifference among teachers (Figone, 1994) while other research advocated for comprehensive educational reform and supports to build self-esteem and improve academic achievement among student-athletes (American Sports Institute, 1995). Reform efforts did take place, and in 1996 the National Collegiate Athletic Association (NCAA) released a guide for all college-bound student athletes that entailed all requirements to become and to remain eligible to play sports. Despite reform efforts, by the end of 1999 graduation rates among the two most revenue generating sports (football and basketball) had reached a seven-year low (Suggs, 1999).

The debate about the effects of sports participation and academic achievement continues, prompting many educational institutions to adapt to the unique academic needs of student-athletes due to the increased demands of participating in school sports (Frost, 2001; Scott,

Paskus, Miranda, Petr, & McArdle, 2008; White, 2006). Some researchers suggest a positive relationship between athletics and academics (Fuller, Lawrence, Harrison, Eyanson, & Osika, 2017; Hwang, Feltz, & Kietzmann, 2013) while others conclude that participation in school sports negatively affects the academic performance of student-athletes (Banwell & Kerr, 2016; Howard, 2013; Levine, Etchison, & Oppenheimer, 2014). Among these studies, the diverse methods of measure, multitude of variables, and perceived biases among the researchers yield conflicting results. Only recently have researchers begun to compare the academic performance of student-athletes in and out of their respective seasons of play (Foye, 2018; Hadfield, 2017; Schultz, 2015).

Social Background

As participation in school sports continues to grow (Fuller, Lawrence, et al., 2017), research examining the relationship between athletics and academics should narrow in scope. In the 2000s, many states began imposing requirements that student-athletes pass a certain number of classes to be eligible to play a sport (Vidal-Fernández, 2011), and the NCAA required that student-athletes maintain a certain GPA to remain eligible to play (LaForge & Hodge, 2011). Researchers are narrowing their scopes of focus to specific areas within the general relationship between athletics and academics such as the role of athletic identities (Fuller, Harrison, Bukstein, Martin, Lawrence, & Parks, 2017; Hwang et al., 2013), perceptions of student-athletes (Levine et al., 2014; Simons, Bosworth, Fujita, & Jensen, 2007), and the effects of academic support from coaches and institutional supports (Monda, Etzel, Shannon, & Wooding, 2015; Sheldon & Watson, 2011). However, researchers have only recently examined the in- and out-of-season effects of athletic participation on academic performance from the perspective of a causal relationship.

There are three societal implications of research in this area. One is that student-athletes have often been perceived as having less academic ability compared to traditional students. This is a generalized assumption that is not supported by the literature (Levine et al., 2014), and supports the general idea that student-athletes should be regarded as students first, particularly within high school settings. Many benefits of athletic participation may not be immediate. In fact, the benefits may not manifest themselves until adulthood (Broh, 2002) and may manifest themselves in a variety of ways beyond academic achievement such as work ethic (Moore, 2017). While the results are mixed regarding the general relationship between academics and athletics, there is a positive relationship among winning athletic teams and academic achievement and a negative relationship with losing athletic teams and academic achievement (Bailey & Bhattacharyya, 2017). Thus, a winning culture can simultaneously manifest itself athletically and academically.

Theoretical Background

Constructivist theory is rooted in the belief that while individual knowledge and world view is gleaned from the environment, it is also constructed from within the individual mind (Schunk, 2016). Vygotsky (1997) noted that animals are completely susceptible to their environments and must adapt, but humans can actually change their environments. In other words, human beings are equipped with unique cognitive abilities that can build resiliency, self-efficacy, and strong identities in spite of their environments. Student-athletes especially relate to these theories because of their adolescent development stages and the influence of the types of identity that they develop. Self-determination theory provides the best framework within constructivism to examine the influence of identity development among student-athletes and to account for the significant power of influence among positive adult mentors and other autonomy

supports (Sheldon & Watson, 2011). That is, student-athletes' development of strong athletic identities over time may account for poorer academic performance at higher levels of play such as high profile revenue sports. This study provides an overview of the general relationship between athletics and academics, compares the influence of athletics on academics among student-athletes at various levels of play, and ultimately determines the effects of in- and out-of-season play on the academic performance of student-athletes in a low-income high school.

Problem Statement

The current research provides mixed results regarding the general relationship between athletics and academics. Many argue that participation in school sports adversely affects academic achievement (Banwell & Kerr, 2016; Eitle & Eitle, 2002; Howard, 2013) while others believe that there is a positive relationship between athletic participation and academic achievement (Barber, Eccles, & Stone, 2001; Guest & Schneider, 2003; Hwang et al., 2013). Most of the research is broad in scope and fails to focus on the effects of specific variables within this relationship, such as in- and out-of-season effects. The effects of athletic participation on the academic performance of high school student-athletes are largely unknown due to a limited amount of research at the secondary level and due to conflicting results gleaned from research that has been conducted. The scope of focus on these variables should be narrowed to glean insights into more meaningful correlations. While most of the negative in-season effects are associated with time demands, there are also negative effects associated with identity (Beron & Piquero, 2016; Owen, 2016). High school student-athletes are particularly susceptible to the effects of time demands and the effects of identity, as they are in the prime age groups for identity development. Yet, no research has measured the in-season and out-of-season

effects on identity, but it is likely that students are more susceptible to the influence of group identity during the off season.

Despite the increased popularity of school sports, negative perceptions about the academic abilities of student-athletes persist. According to Simons et al. (2007), the majority of student-athletes believed that they were not viewed favorably within the academic community, which can be detrimental to the development of strong academic identities. The problem is that the overwhelming majority of research examining the in-and-out of season effects on academic performance has been done at the collegiate level, and only a handful of studies have been completed on high school student-athletes, leaving the academic effects of in-season play largely unknown at the secondary school level (Emmons, 1994; Foye, 2018; Hwang et al., 2013; Schultz, 2015).

Purpose Statement

This quantitative study used a repeated measures design to examine the in-season and out-of-season effects of athletic participation on the academic performance of student-athletes in a low-income high school located in a southern state. Student-athletes are students who participated in a complete season of a school sponsored sport. The independent variable for this study is in- and out-of-season athletic participation. In-season is defined as the dates in which the respective sport begins and ends competitive play according to the state High School League (SCHSL, 2018), and out-of-season is likewise defined as the dates in which the sport is outside of the dates of competitive play. The dependent variable in this study is academic performance. Academic performance is defined as the statistical difference between in-season and out-of-season averages of GPAs of the student-athletes during the respective athletic seasons. A comparison of the GPAs of student-athletes has been the primary method of measure of

academic performance for numerous studies (Bailey & Bhattacharyya, 2017; Hadfield, 2017; Levine et al., 2014; Monda et al., 2015; Scott et al., 2008). This method was also the primary method used in the leading study by Schultz (2015) to examine the in- and out-of-season effects of participating in sports on the academic performance of high school student-athletes.

Significance of the Study

Professional and collegiate sports are heavily commercialized with around-the-clock television exposure (Burgess, 2007). This study is important because as the commercialization of high school sports continues to grow (Gehring, 2004), the effects on student-athletes' athletic and academic identities are compounded, and special treatment given to student-athletes is increasing (Fuller, Lawrence, et al., 2017), the effects of which can manifest as academic underperformance. According to the National Federation of State High School Associations (NFHS, 2017), 7,963,535 students participated in high school sports in the 2016-2017 athletic season, accounting for more than half of all high school students and marking the 33rd consecutive increase in sports participation, indicating that as participation in school sports increases so will the effects of in- and out-of-season play on academic performance. Researchers have only recently examined the in- and out-of-season effects on academic performance, and a very limited amount of research has been done at the secondary school level (Foye, 2018; Hadfield, 2017; Schultz, 2015). This study adds to the literature by examining the in- and out-of-season effects of athletic participation on the academic performance of secondary students.

Hwang et al. (2013) found a strong positive relationship between athletic and academic identities. However, it is plausible that student-athletes lose some of their athletic identity during the off-season and are more susceptible to group identification with non-athletic peers. Consequently, the problem is that the off-season may adversely affect the academic motivation

gleaned from self-determination, resulting in negative effects on academic performance, and the in-season effects of athletic identity and higher levels of self-determination may positively affect the academic performance of high school student-athletes (Sheldon & Watson, 2011). Yet, very little research has been done to examine this phenomenon at the secondary level, and this study examines the effects of in- and out-of-season sports participation on academic performance to address the gaps in existing research. Results gleaned from this study should be used to guide future research to study specific variables contributing to this phenomenon as well as inform the efforts of coaches and school administrators to better support the academic needs of student-athletes as academic and athletic environments continue to evolve.

Research Question

RQ1: Is there a difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play?

Definitions

1. *Academic identity* - The degree to which an individual identifies oneself with the academic role (Yukhymenko-Lescroart, 2014).
2. *Academic performance* – Defined by the researcher citing multiple studies as the difference in the semester 1 (S1) and semester 2 (S2) averages of GPAs of the student-athletes during the respective semesters.
3. *Athletic identity* – The degree to which an individual identifies oneself with the athlete role (Yukhymenko-Lescroart, 2014).
4. *In-season* - The dates in which the respective sport begins and ends competitive play (South Carolina High School League, 2018).

5. *Out-of-season* - The dates in which the sport is outside of the dates of competitive play (South Carolina High School League, 2018).
6. *Reliability* - The consistency, stability, and precision of test scores (Gall, Gall, & Borg, 2007, p.151).
7. *Student-athlete* – Defined by the researcher as a student that participated in a complete season of a school sponsored sport recognized by the South Carolina High School League.
8. *Validity* - The appropriateness, meaningfulness, and usefulness of specific inferences made from test scores (Gall et al., 2007, p.151).

CHAPTER TWO: LITERATURE REVIEW

Overview

The focus of this study was to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of low-income high school athletes and to glean insights into these effects for future studies to examine specific variables contributing to this phenomenon. The theoretical framework for this study is based on how foundational theory relates to more recent theory and contributes to understanding how academic performance is affected by athletic participation in- and out-of-season. The review of literature gleans insights into the general relationship between athletics and academics at various levels, summarizes existing research examining in- and out-of-season effects, and ultimately establishes the scope and purpose of this study to contribute to existing literature where gaps exist.

Introduction

The number of studies examining the general relationship between athletics and academics is abundant and dates to the early 1900's. However, a gap in literature exists where there is a lack of examination of specific variables within the general relationship. Recently, researchers have narrowed their scopes of focus to some variables such as the roles of athletic identities, institutional supports, in- and out-of-season effects, and others as they relate to the academic achievement of student-athletes. According to St-Amand, Girard, Hiroux, and Smith (2017), participation in general extracurricular activities benefits academic performance, and parents play significant roles in determining if and what types of extracurricular activities their children participate in (Asbourne & Andres, 2015). Specifically, participation in school athletics

also benefits academic achievement among student-athletes while providing many other school and community-wide benefits (Bowen & Hitt, 2016).

Theoretical Framework

The theories that guide this study are constructivist theory (Schunk, 2016), sociocultural theory (Vygotsky, 1997), and the theory of self-determination (Ryan & Deci, 2016) as they relate to the development of identity and academic performance among student-athletes.

Constructivism

According to Schunk (2016), constructivism is regarded less as a theory and more as an “epistemology, or philosophical explanation about the nature of learning” (p. 298), and it addresses the exogenous, endogenous, and dialectical perspectives for how knowledge is constructed. Constructivism proposes that individuals construct knowledge and individual realities based upon their experiences (Smith, 1993). The exogenous perspective refers to knowledge being constructed as a result of external environmental influences while the endogenous perspective refers to the construction of knowledge based on prior knowledge and cognitive abstraction (Schunk, 2016). The exogenous perspective has manifested itself in the influence of school climate on the identity development of student-athletes (Rankin et al., 2016), and the endogenous perspective is evidenced by the influence of identity on academic outcomes among student-athletes (Hwang et al., 2013). That is, Rankin et al. (2016) found that the external influence of school climate directly affected the identity development of student-athletes consistent with the exogeneous perspective whereas Hwang et al. (2013) found that the internal influence of self-identify among student-athletes significantly related to levels of academic achievement consistent with the endogenous perspective. Therefore, external factors influence internal perspectives such as identity and efficacy, and internal factors influence outcomes such

as academic achievement and productivity. Research by Monda et al. (2015) highlighted how the constructivist framework is effectively used as a basis to examine the psychology of student-athletes. The findings were that academic preparation (exogenous) and motivation (endogenous) caused higher levels of academic engagement (outcomes) among freshman intercollegiate student-athletes.

The dialectical perspective of constructivist theory embodies a more social aspect of knowledge construction in that knowledge is derivative of environment and interactions with others (Schunk, 2016). This review of literature expounds upon how constructivist theory provides a framework to examine influences on self-identity among student-athletes. More specifically, this review of literature examines how the dialectical perspective of constructivism influences self-identity among student-athletes, how identity relates to self-efficacy, and how self-efficacy relates to academic performance.

Sociocultural Theory

Lev Vygotsky's theoretical framework for sociocultural theory is rooted in the effects of social interactions on the mental structure of individuals during development. That is, cultural development occurs first interpsychologically through interactions with others and then intrapsychologically within the individual's mental structure. According to Cherry (2018), "sociocultural theory focuses not only how adults and peers influence individual learning, but also on how cultural beliefs and attitudes impact how instruction and learning take place" (p. 2). Student-athletes are susceptible to social influences on individual development where contradicting cultures exist between athletics and academics.

Theorists of constructivism believe that knowledge is constructed by the individual rather than shaped solely by the environment. Lev Vygotsky analogized this difference between

animals and humans where humans have the unique ability not only to adapt to environmental influences but to change their environments (Vygotsky, 1997). Particularly within constructivist theory, Vygotsky's sociocultural theory fits the dialectical model of constructivism where "knowledge derives from interactions between persons and their environments" (p. 299). Experiences play an important role in how individuals perceive themselves and how they view the world. Student-athletes are particularly susceptible to the effects of public perceptions because of their athletic identities, and student-athletes with strong athletic identities often underperform academically (Levine et al., 2014; Wininger & White, 2015).

According to Vygotsky (1978), cognition is first developed through interaction with others, and these social experiences ultimately shape individuals' mental structure. Sociocultural theory is reflected in a study by Levine et al. (2014) who found that student-athletes care more about academics than they portray to fellow teammates in order to fit the social norm. These findings were supported by Wininger and White (2015), concluding that negative perceptions regarding academics exist among student-athletes. Sociocultural theory is reflected in these studies in that student-athletes learn behaviors and norms through social interactions with their athletic peers and exhibit behaviors that conform to social norms.

Sociocultural theory has been used as the framework for numerous other studies regarding student-athletes (Bradley & Conway, 2016; Fuller, Harrison, et al., 2017; Hwang et al., 2013; Sitkowski, 2008). Sociocultural theory is therefore relevant to this study as it accounts for the social influences of mentors and peers on the identity development and ultimately academic performance among student-athletes.

Self-determination Theory

According to Ryan and Deci (2016) self-determination theory is an “organismic theory of human behavior and personality development” (p. 3). The theory examines how social-contextual factors influence the personal satisfaction and psychological wellness of individuals through levels of controlled and autonomous motivations. Many student-athletes develop group identities based on their environments (Fuller, Harrison, et al., 2017), which can have negative effects on the development of strong academic identities (Howard, 2013). These negative effects are the subject of focus within self-determination theory. Sheldon and Watson (2011) describe the theory of self-determination as:

A dialectically and organismically based theory of positive motivation. One important aspect of the theory focuses on power relations between dominant individuals (i.e., coaches, parents, teachers, managers) and subordinate individuals (i.e., athletes, children, students, workers), seeking to understand how these relations influence resultant motivation in the subordinates. (p. 110)

Thus, self-determination theory is a means by which the effects of group identity can be reconstructed by dominant figures to form stronger academic identities among student-athletes. In fact, Ryan and Deci (2016) note that self-determination theory’s “specification of motivational and psychological principles must not only fit within but must also be informed and constrained by what we know about...sociocultural theory” (p.8). This theory, in practice, has manifested itself in increased levels of motivation and strong academic success among student-athletes who received positive attention and supports that contributed to self-determination compared to student-athletes who did not receive positive attention and supports (Monda et al., 2015). Supports in this case were high expectations, clear academic goals, and mentoring from positive

adult figures. Keshtidar and Behzadnia (2017) also observed the effects of self-determination theory among student-athletes, concluding that autonomous motivation predicted task orientation and the intention to continue playing sports.

The theory of self-determination has served as the framework for numerous studies to examine the academic performance, personal development, and motivation levels of student-athletes (Harris, Bean, & Fraser-Thomas, 2018; Hinton & Osler, 2015; Montgomery, 2010; Sheldon & Watson, 2011). Comparing differences in the athletic performance of student-athletes in-season and out-of-season will provide a framework to examine the effects of self-determination theory and the relationship with other variables within this phenomenon (Foye, 2018). That is, the effects of positive autonomy supports from coaches and parents are more prevalent during the season of play and will likely lead to more effort academically whereas these supports and attention are less prevalent during the off season (Montgomery, 2010). In fact, to combat the effects of the difference in positive attention and supports in- and out-of-season, Minix (2017) recommended that coaches should manage and celebrate team GPA during the off-season the same as during the season. The decline of attention and supports gleaned from positive figures such as coaches and parents will likely cause a decline in self-determination during the off-season. A decline in self-determination will likely manifest in poorer academic performance during the off-season as compared to the in-season.

Participation in school sports affects student-athletes differently depending upon their level of play from middle school sports through intercollegiate sports (Hadfield, 2017; Ritchie, 2012; Schultz, 2015). For example, Sheldon and Watson (2011) examined self-determination among Division I varsity athletes and Monda et al. (2015) examined Division I freshman athletes. Both studies indicated the need for academic supports among student-athletes, but the

amount and type of supports needed among student-athletes varied depending upon the level of play at different developmental levels. Among high school student-athletes, autonomy support from coaches and both parents positively related to the levels of self-determination with high statistical significance (Amorose, Anderson-Butcher, Newman, Fraina, & Iachini, 2016).

The theory of self-determination also manifests itself in the literature regarding identity development and academic performance among student-athletes as indicated by the effects of autonomy supports on self-determination. Erickson and Côté (2016) examined the effects of interactions between coaches and student-athletes at various levels of development. That is, student-athletes' levels of development were categorized as high and increasing, low and decreasing, and moderate and maintaining. The study concluded that positive interactions and personal relationships between coaches and student-athletes related to higher levels of personal development across all three categories over the course of the athletic season. Similarly, Defreese and Smith (2014) examined student-athletes across an athletic season and found that social supports had a positive relationship whereas negative social interactions had a negative relationship with student-athletes' overall well-being. Student-athletes are more likely to receive autonomy supports from coaches and parents while in season, which will positively influence levels of self-determination as well as athletic and academic identities. Therefore, an examination of in- and out-of-season effects of athletic participation will yield positive effects on academic performance while in season.

Sociocultural theory and self-determination influence motivation levels and the development of identity (Sheldon & Watson, 2011; Vygotsky, 1978). Among many student-athletes, strong athletic identities often have negative effects on academic achievement, which is associated with low levels of academic self-efficacy (Booth, Abercrombie, & Frey, 2017;

Yukhymenko-Lescroart, 2014). Therefore, low academic self-efficacy is a major culprit of academic underperformance among student-athletes. MacNab (2015) examined the relationships between athletic and academic identities among student-athletes, and then compared the data to determine the relationship with academic performance using a two-factor analysis. The results support a positive relationship between academic identity and self-efficacy and a positive relationship between self-efficacy and academic performance. High levels of self-efficacy almost always contribute to higher levels of academic achievement among secondary students, and students receiving autonomy supports report higher levels of self-efficacy (Booth et al., 2017; Choi, Chang, Kim, & Reio, 2015; Reed, Kirschner, & Jolles, 2015). Among student-athletes, levels of academic support services received while participating in sports had significant and positive effects on their levels of self-efficacy (Burns, Jasinski, Dunn, & Fletcher, 2013). The problem of low self-efficacy among secondary students was identified when reviewing studies examining how the levels of academic self-efficacy affected academic achievement (Booth et al., 2017; Choi et al., 2015; Reed et al., 2015).

The theoretical framework for this study is based on the dialectical perspective of sociocultural theory within constructivist theory in that individuals can overcome and reconstruct their perceptions and thus reality. This process of development for student-athletes is significantly enhanced by incorporating aspects of self-determination theory such as autonomy supports and positive mentorship, ultimately resulting in the development of strong self-identities (Amorose et al., 2016; Erickson & Côté, 2016; Sheldon & Watson, 2011). The development of strong athletic and academic identities relates directly to respective levels of self-efficacy and thus levels of academic achievement (Booth et al., 2017; MacNab, 2015). Since autonomy supports and attention from positive figures is more prevalent during the season of play, student-

athletes are more likely to perform higher academically during the athletic season as opposed to the off-season.

Related Literature

Many perceptions exist regarding the relationship between athletics and academics, and these perceptions are inherently embodied in the relationship between student-athletes and academics. Many of the perceptions about student-athletes fit the *dumb jock* narrative and suggest that student-athletes get preferential treatment because of their athletic identities. Student-athletes are often not regarded as true members of academia (Wininger & White, 2015). Levine et al. (2014) concluded that this form of negative stereotyping caused student-athletes to display apathy or to intentionally underperform academically to fit the social norms associated with these negative perceptions. These findings are supported by research from Riciputi and Erdal (2017) who examined the effects of stereotyping on the academic performance of student-athletes. The study found that student-athletes who were primed with strong athletic identities received lower mean scores on math assessments compared to student-athletes who were not primed with strong athletic identities, further supporting the negative academic effects of stereotyping student-athletes. However, student-athletes privately reported caring more about academic achievement than they reported about their own perceptions of how much other student-athletes care about academics. School climates where these negative perceptions exist about student-athletes directly and negatively affect their academic performance (Rankin et al., 2016), and contribute to low levels of academic self-efficacy.

Self-efficacy

Many external or environmental factors contribute to low academic self-efficacy. Major factors contributing to the problem of low academic self-efficacy include the extent of parent

involvement, socioeconomic status, gender, and subject-specific efficacy (Aydin, 2016; Choi et al., 2015). One longitudinal study found that the effect size of the relationship between parent involvement and academic achievement was small but that the relationship between parent advising coupled with subject-specific efficacy and academic achievement were significant (Choi et al., 2015). In this study, parental involvement was regarded as parental participation within the school whereas parent advising was home-based and intended to guide the students' academic performance and future academic aspirations through advice about course selections, plans for college entrance exams, and college applications.

Booth et al. (2017) used a mixed method approach to analyze the relationship between academic achievement, ethnicity, ethnic identity and self-efficacy. Over the course of a year, the researchers examined these variables among 482 students in the fall and 392 students in the spring in a diverse Midwest city in the United States. A qualitative analysis was conducted on the ensuing data based on several measures of "self" and self-efficacy. The researchers noted the distinction between self-perceptions and self-efficacy in that efficacy focused on belief in one's ability. An analysis of the data indicated that prior academic achievement in math and ethnic identity were predictors of self-efficacy at a statistically significant level. While prior academic achievement serves as the greatest predictor of self-efficacy, *group consciousness* reduced external stereotypes of social barriers and increased individual ethnic identity. Consequently, the negative effects of ethnic identity on self-efficacy was reduced among some minority groups. These findings signify the relationship between ethnic identity and self-efficacy, which may account for lower academic performance among minority student-athletes (Harris, Hines, Mayes, Thomas, & Bagley, 2016; Yeung, 2015).

Periods of transition also significantly influence levels of self-efficacy. Transitions may include changes in grade levels, schools, or different levels of sports. A longitudinal cohort study attempted to examine the relationship between the level of self-efficacy and subject-specific efficacy with academic achievement among 6th grade students and then as 9th grade students (Reed et al., 2015). The study found that self-efficacy did not significantly contribute to academic achievement in the 9th grade but that subject-specific efficacy did significantly translate into academic achievement at the 6th and 9th grade levels. The findings suggest that schools should systemically implement subject-specific efficacy programs across grade levels, and that efforts should be multiplied when students transition from one level of education to the other (e.g. middle to secondary). Usta (2017) examined the relationship between academic motivation, self-confidence, and self-efficacy among 9th grade students who recently transitioned from the middle school level. These variables were measured against academic performance and were subdivided into intrinsic and extrinsic levels of self-confidence. The performance dimensions measured were starting, not giving up and sustaining. The study found a direct relationship between students' levels of motivation and the three performance dimensions. Motivation was also found to be statistically significant with levels of intrinsic confidence but low within levels of extrinsic confidence. Conclusively, when academic motivation was coupled with intrinsic self-confidence the effects included more frequent effort and more sustained effort, resulting in higher academic achievement.

The idea that instructional strategies can increase academic self-efficacy is supported by Artino (2012) who expounded upon many aspects of self-efficacy including the nature and structure of self-efficacy, definition, influences on human functioning, sources, and measurement. The factors most related to the field of education were the instructional

implications. Assuming an initial low academic self-efficacy, the researcher recommended using specific instructional practices to maximize academic self-efficacy among the student body. The first was to assist in establishing clear academic goals and then establish more challenging goals, supporting the notion of *cognitive load* within information processing theory. The next two steps were to provide detailed and relevant feedback and then to maximize collaboration opportunities to establish peer modeling as a tool to build self-efficacy. The building blocks within instructional methodologies are consistent with developing self-determination and self-efficacy as evidenced by autonomy supports for student-athletes resulting in higher levels of self-determination and academic performance (Amorose et al., 2016; Monda et al., 2015; Sheldon & Watson, 2011). Thus, the processes and supports required to build high academic self-efficacy must be at the forefront of curriculum planning for educators and at the forefront of establishing autonomy supports for coaches (Gardner, 2018; Worthy, 2017).

Student motivation continues to be an area of interest for researchers within the field of education and particularly the role student motivation in the educational process. According to Schunk (2016), the points of interest regarding motivation are the multitude of factors that affect motivation levels. Among these are family influences, self-worth theory, and prior achievement levels. Self-concept and self-esteem are directly linked to student motivation (Hwang et al., 2013; Howard, 1984; Sheldon & Watson, 2011). Self-concept is the perception of oneself derived from levels of confidence in individual abilities. Prior experiences, reinforcements, and other external factors build this level of confidence that ultimately translates into high self-confidence. Self-esteem is more personalized in that it places value on self-worth rather than confidence in ability (Lee, 1996). The relevance to education is that there is a direct relationship between self-concept and the ability and motivation to learn (Ryan & Deci, 2016). External

factors contributing to low academic self-efficacy are most significantly controlled for by implementing systems of autonomy support (Monda et al., 2015). Further research is needed to examine the relationship between academic self-confidence and academic competence as they relate to athletic and academic identities.

The first part of Albert Bandura's belief regarding self-efficacy is the belief in one's ability to accomplish a task or one's level of confidence. The second notion of the premise of self-efficacy is that it can be affected by intrinsic and extrinsic factors (Bandura, 1997). For example, a student may have gradually developed a high sense of self-efficacy or confidence based on prior experience. Conversely, a student may have developed a low sense of self-efficacy based on the lack of experience or negative experiences. Bandura attempted to explore relationships between self-efficacy and many social, personal, political, and other factors. As a social cognitivist, Bandura therefore naturally explored the relationship between social factors and cognitive functioning. The findings about the causal relationships between external factors and the levels of academic self-efficacy suggests that parent involvement, socioeconomic status, and identity do significantly influence academic self-efficacy (Amorose et al., 2016; Monda et al., 2015; Sheldon & Watson, 2011). Further research suggests that systematically implementing metacognitive strategies will result in increased academic self-efficacy among secondary students (Aydin, 2016).

Self-efficacy is an important component to consider when examining the academic achievement of student-athletes because self-efficacy predicts academic outcomes (Burns et al., 2013; MacNab, 2015). Likewise, determinants of self-efficacy among student-athletes should remain a primal focus of researchers, coaches, and other stakeholders. Worthy (2017) examined levels of self-efficacy among student-athletes from low-income and high-poverty areas. Student-

athletes reported significantly higher levels of academic self-efficacy when they believed they had strong and positive relationships with their coaches. Gardner (2018) found a positive relationship between the levels of parental involvement and academic self-efficacy among student-athletes. This study also found that high levels of academic self-efficacy significantly related to higher GPAs. While the relationships of parents and coaches with student-athletes are significant influences on the development of strong identities and self-efficacy, learning theories such as information processing theory are also applicable as they relate to the development of self-efficacy. Student-athletes process information differently based upon their athletic status (Braakhuis, Williams, Fusco, Hueghlin, & Popple, 2015). Task orientation, an element of information processing theory, significantly predicted levels of self-efficacy among high school student-athletes (Canpolat & Çetinkalp, 2011), and high levels of self-efficacy resulted in more resilience and sustained effort among student-athletes compared to non-athletes (Jalili & Hosseinchari, 2010).

Perceptions exist that student-athletes get special treatment in academic settings (Fuller, Harrison et al., 2017), and there are alternative perceptions among student-athletes that they are in fact mistreated by their teachers because of being athletes (Simons et al., 2007). According to Wininger and White (2015), traditional students believe that academic expectations for student-athletes are lower while student-athletes believe that academic expectations are higher for them compared to traditional students. Additionally, student-athletes perceive their individual academic achievement as high when compared to fellow student-athletes. However, none of these perceptions reflect universal reality. Levine et al. (2014) found that student-athletes' actual levels of academic achievement were far greater than their self-reported perceptions of how much student-athletes and their fellow teammates cared about academic achievement. In other

words, the academic performance numbers are greater than the perceptions. The subsequent sections of this literature review will examine the effects of athletic participation on academic performance at various levels of play, including studies that find the relationship to be negative, positive, or null. Specific in- and out-of-season effects will then be examined, followed by a discussion of other variables, gaps in the existing literature, and the summary.

The Negative Effects of Sports Participation on Academic Achievement

Many argue that participation in school sports adversely affects academic achievement. Sandstedt et al. (2004) regard strong athletic identity as a direct hindrance to academic performance, and according to Howard (2013), African-American males are particularly susceptible to this adverse relationship. These negative effects are exacerbated by coaches accepting the minimum grade requirements to participate in school sports (Hada, 2006) and when coaches fail to identify direct connections between sports participation and academic achievement (Banwell & Kerr, 2016). In fact, many teachers and coaches are simply indifferent regarding the academic performance of student-athletes (Figone, 1994). Acceptance of the minimum academic requirement sends a message to student-athletes that the minimum is acceptable, consequently stifling efforts that would arguably produce higher academic outcomes. Not only are test scores negatively impacted by sports participation (Eitle & Eitle, 2002), but a school's academic mission is lost completely when there is an overemphasis placed on athletics (Hoff, 2006). While findings from many studies conclude that participation in school sports negatively affects academic performance, three key contributors to these negative effects emerge from the literature: time, athletic and academic identities, and autonomy supports.

Time. The demands of time for traditional students to meet academic requirements is challenging. However, the demands of time for student-athletes to meet athletic and academic

requirements is particularly challenging, especially while sports are in season (Owen, 2016). In fact, a majority of student-athletes report getting less sleep and increased stress levels due to the demands of athletic participation (Whitsell & Naquin, 2016). Efforts to combat the time demands of athletic participation to support academic achievement are challenging. Owen (2016) put Division II baseball players through a time management workshop before the beginning of the season and semester. A pre-and post-test design was used to determine if there was significant difference between GPAs and stress levels before and after the workshop. GPAs from the previous year were compared to post-workshop GPAs using a *t*-test, and stress levels were measured before and after the workshop using Sheldon Cohen's perceived stress scale. Results indicated no significant difference in GPAs nor in reported stress levels.

Among college athletes, negative effects were observed on academic performance while in season (Frost, 2001; Scott et al., 2008; White, 2006). These negative effects were more obvious in sports with long seasons such as football and basketball. Thus, the level of play controlled for the in-season effects on academic outcomes at a significant level. Simply, lower levels of play equated to higher academic outcomes, and higher levels of play equated to lower academic outcomes while in season. Middle school student-athletes in-season effects were positive and significant for academic performance, attendance, and behavior (Ritchie, 2012). Junior varsity student-athletes had positive and significant in-season effects on academic outcomes while varsity athletes had negative and significant effects (Schultz, 2015). In fact, 65% of Division I athletes indicated that their high school GPAs would be much higher if they had not played sports at the varsity level (Potuto & O'Hanlon, 2007). In general, higher profile sports have a negative relationship with academic achievement (Brownlee & Linnon 1990; Daniels, 2004), and college student-athletes performed lower academically during the season of

play along all sports but performed significantly lower among higher profile sports (Scott et al., 2008).

Foltz (1992) compared the academic achievement of intercollegiate student-athletes based on gender and type of sport played. Findings revealed a difference in the academic achievement of males and females with females scoring higher, but also found that student-athletes playing non-revenue sports had significantly higher academic achievement when compared to those playing revenue sports. While Foltz used GPAs to measure academic achievement, lower Scholastic Aptitude Test (SAT) scores have been found among student-athletes playing revenue sports when compared to the scores of student-athletes in non-revenue sports and traditional students (Maloney & McCormick, 1993). Since the time demands of sports increases at higher levels of play, the lack of time to focus on academics has negative effects on academic performance as the level of play increases.

Athletic and academic identity. As the effects of time on the academic performance of student-athletes vary at different levels of play, the development of athletic and academic identities will vary depending upon age and the level of sport played. According to Hwang et al., (2013), “because of the chief period of identity development and the popularity of sport participation during adolescence, many of those involved in athletics are likely to incorporate the role of the athlete into their sense of self” (p. 765). It is therefore plausible that higher level sports would include student-athletes with stronger athletic identities since these identities would have had time to develop. Athletic coaches have significant influence in the personal growth of student-athletes across all stages of development (Rus & Radu, 2014), but particularly among student-athletes with strong athletic identities and low academic identities (Beron & Piquero, 2016).

Beron and Piquero (2016) examined 19,000 Division I-III student-athletes to determine the relationship between athletic and academic identities with GPAs. A mixed analytical model was used to control for sociodemographic and academic variables in the analysis. Athletic identity was measured along six variables, and academic identity was measured along four variables before comparing with GPAs. The study found no significant difference in GPAs based on gender or division level but found that athletic versus academic identities significantly and directly influenced GPAs. These significant results were attributed to the influence of coaches and their roles in identity development and levels of emphasis placed on academics.

According to Love (2018), athletic and academic identities are synonymous. Strong athletic and academic identities both contribute to higher levels of overall self-efficacy (MacNab, 2015). However, a major problem with the development of athletic and academic identities is that they are often regarded as separate and are referred to by Rankin et al. (2016) as “two particularly salient identities” (p. 704). In addition to the negative effects of strong athletic identities on academic identities, student-athletes who begin to strongly identify as athletes at younger ages may suffer with general identity development later in life (Kerr & Lally, 2005). This is manifested in the famed movie *Friday Night Lights* which depicts the true story of Boobie Miles, a star high school football running back and top college recruit (Berg et al., 2004). Miles suffered a career ending injury and upon returning to his uncle’s car after cleaning out his locker for the last time began to cry and asked, “Now what we gonna do? I can’t do nothing else but play football.” Miles had developed a strong identity as an athlete, and when sports ended for him his identity ended as well.

The identity as an athlete may have negative effects on academic performance if there is a negative relationship between athletic and academic identities. The 30-item Likert scale

student-athlete career situation inventory (SACSI) was administered to 204 college athletes and indicated that student-athletes with stronger athletic identities showed lower tendencies to identify as students seeking high levels of academic achievement (Sandstedt et al., 2004). The effects of strong athletic identities have different implications based on the type of sport played and gender (López, Barriopedro, & Sanz, 2015), and may result in lasting negative effects such as decreased decision-making abilities (Menke, 2015). The findings of these studies therefore suggest that strong athletic identities have a negative relationship with academic identities. Since there is some degree of commonality in this negative association with academics among student-athletes, the effects of group identity may make student-athletes more susceptible to academic underperformance (Levine et al., 2014).

The conflict between athletic and academic identities is further exacerbated by school climate. Rankin et al. (2016) surveyed 8,000 student-athletes using the SACS. The results supported previous research that student-athletes playing higher level sports developed stronger athletic identities, and that while school climate did not attribute to the development of athletic identities, it did attribute to the academic outcomes of student-athletes at all levels of play.

Autonomy supports. Research by Rankin et al. (2016) further yielded findings about the importance of interactions among student-athletes and faculty members. These positive interactions influence both identity development and academic success (Harris et al., 2018; Hodes, James, Martin, & Milliner, 2015; Kendellen, & Camiré, 2015). Regarding academic success, student-athletes who receive structured supports perform higher academically and have higher levels of self-esteem (American Sports Institute, 1995). In terms of identity development, these findings are consistent with Fuller, Harrison, et al. (2017) who examined the development of student-athletes in a high school setting. Yet, many professionals across institutions lack

adequate understanding of the psychological and developmental needs of student-athletes (Hebard & Lamberson, 2017). For example, Buzzetta, Lenz, and Kennelly (2017) treated a group of student-athletes in a summer bridge program to develop decidedness and identity prior to entering the college setting. When compared to the untreated group of student-athletes, the results were not significant. This indicates the ineffectiveness of many institutional programs and initiatives such as a time management workshop, which failed to reduce stress or to increase the academic performance of student-athletes (Owen, 2016). A similar study by Parker, Perry, Hamm, Chipperfield, and Hladkyj (2016) piloted a support program for freshmen collegiate student-athletes that had recently transitioned from high school. The treatment resulted in higher end of course grades and fewer course withdrawals compared to the untreated group. The difference in the two studies is that the supports from Parker et al. (2016) continued throughout the academic semester whereas the supports from Buzzetta et al. (2017) were limited to the summer before entering the first term as a college freshman.

Group affiliation and interaction with positive adult figures were found to be major contributing factors to the identity development as leaders, both athletically and academically. Winning teams in higher profile sports generate more revenue, which translates into more athletic and academic supports (Won & Chelladurai, 2016). Although these tangible resources translate into higher academic achievement, intangible resources gleaned from mentorship and personal development ultimately translate into actions that produce tangible resources, highlighting the importance of mentorship and other autonomy supports. Researchers have discovered that training programs are needed across institutions to train faculty members to meet the comprehensive developmental needs of student-athletes (Grandy, Lough, & Miller, 2016), and coaches especially need these skills (Ferris, Ettekal, Agans, & Burkhard, 2016). In addition

to personal development, student-athletes have higher GPAs when their coaches emphasize academics (Harris et al., 2018). Banwell and Kerr (2016) found that coaches largely identify their roles in facilitating the growth and development of student-athletes, but they could not identify how participating in sports directly translated into personal development or academic achievement. This highlights the fact that the primary focus of many coaches is the development of student-athletes as players, and autonomy supports are not available or are not adequate to meet the developmental needs of student-athletes within many academic institutions. Ultimately, school climates that overly emphasize athletics over academics create environments that produce student-athletes with stronger athletic identities as opposed to academic identities.

The Positive Effects of Sports Participation on Academic Achievement

Thus far, many variables regarding the relationship between athletics and academics have been discussed including time associated with the level of sport played, the role of athletic identity, and autonomy supports. While these variables contribute to the effects of athletic participation on academic performance, the purpose of this section was to examine the direct relationship between athletic participation and academic performance rather than individual variables within this relationship. The primary benefits of participating in school sports will be discussed specifically regarding academic benefits and then other indirect benefits.

Academic benefits. Participation in sports and general physical activities have many physical benefits and do not negatively affect academic performance or cognitive functioning, even among elite athletes with significant time demands and high physical demands (Granacher & Borde. 2017). Although many studies found negative effects of participating in school sports on academic performance (Eitle & Eitle, 2002; Hoff, 2006; Howard, 2013; Sandstedt et al., 2004), other studies suggest a positive relationship between athletics and academic achievement.

In contradiction to Sandstedt et al., (2004), a strong athletic identity has a positive relationship with academic identity and produces higher academic outcomes (Barber et al., 2001; Guest & Schneider, 2003; Hwang et al., 2013). Moreover, an examination of GPAs, test scores, and graduation rates revealed that student-athletes perform higher academically and graduate at higher rates compared to students not participating in school sports (Mahoney & Cairns, 1997; Marsh & Kleitman, 2003; Mihoces, 1996; Silliker & Quirk, 1997; Stegman, 2000; Yeung, 2015; Zaugg, 1998). Despite the multitude of variables and methods of measure that have been examined and used to explore the relationship between athletics and academic achievement, a direct relationship was observed in a study conducted by Bailey and Bhattacharyya (2017) which found that the more successful the team was athletically (i.e. wins and ranking), that the higher the players performed academically. Effort and good behavior also increase with sports participation (Feigin, 1994; Hollingsworth, 1996; Whitley, 1999) as well as benefiting the individual student-athletes in many other capacities (Tozer, 2012).

Most research about the relationship between athletics and academics has been conducted at the collegiate level, and little research has been conducted at the middle and high school levels. Ritchie (2012) found significant effects of participating in sports on the academic achievement of middle school student-athletes in all core classes. In fact, participation in middle school sports has shown to have positive and significant relationships with academic achievement, the desire to enroll in college preparatory classes, and other academic aspirations (Hawkins & Mulkey, 1992). Teachers in three high schools in Eastern Tennessee were administered Likert scale questions and indicated a positive relationship between athletic participation and academic performance among senior student-athletes (Gorman, 2010), and annual yearly progress (AYP) was positively affected by participating in athletics. Yeung (2015)

tested the relationship between athletic participation and academic achievement among high school student-athletes using the high school and beyond (HBD) survey published by the National Center for Education Statistics (NCES). The administration of the survey and analysis of longitudinal data revealed a positive relationship between athletics and academics among student-athletes compared to non-athletes. In a more recent longitudinal study, Hwang et al. (2013) examined the athletic identities and academic achievement of the same group of student-athletes in the 10th grade, 12th grade, and again 8 years after graduating high school using the National Educational Longitudinal Survey-88. The findings were that “athletic participation does not have a negative influence on educational outcomes; rather, it is positively associated with forming an academic as well as athletic identity, which, in turn, has positive impacts on their educational outcomes” (p. 781). This suggests that participating in school sports has lasting educational benefits that continue years beyond participating in sports.

Indirect academic benefits. In addition to research supporting a generally positive relationship between participating in school sports and academic achievement, there are other more subtle benefits that indirectly affect academic achievement. For example, non-cognitive skills gleaned from playing sports can positively influence academic performance. High school student-athletes have higher levels of confidence and better problem-solving skills compared to their non-athletic peers (Senduran & Amman, 2015), and former high school athletes reported the development of transferrable life skills gleaned from participating in school sports (Kendellen & Camiré, 2015). When examining student-athletes from the 9th grade through college sophomores, Lee (1996) found that participating in sports related directly to higher levels of self-esteem and academic achievement. Bradley and Conway (2016) examined how non-cognitive skills such as mental muscle, motivation, and self-control (gleaned from school sports)

transferred into higher levels of academic achievement. They concluded that even the non-cognitive skills of student-athletes transfer directly into skills that support academic achievement and that “underpin success in school” (p. 722). Moreover, an examination of college graduation rates revealed that student-athletes graduate at higher rates compared to non-athletes (Scott et al., 2008). In addition to better performance academically, other benefits of participating in school sports include fewer incidents of discipline, better sense of community, increase in the number of females attending college, and decreased dropout rate among at-risk students (Bowen & Hitt, 2016). College enrollment is also positively related to students participating in school sports while in high school (Muller & Wilkinson, 2012).

No Effects of Sports Participation on Academic Achievement

As the literature indicates, there is an equal amount of research supporting both the positive and negative effects of participating in sports on academic achievement. Other research supports only an indirect relationship (Beach, 1999; Billett, 2013; Bradley & Conway, 2016; Engle, 2012), while others suggest that there is no relationship at all (Emmons, 1994; Hadfield, 2017; Valleser, 2014). Hanks and Eckland (1976) concluded that there was no relationship between athletics and academic performance among college and high school athletes through an analysis of data using GPAs, and the same method was used by Hadfield (2017) to examine student-athletes with learning disabilities which yielded similar findings. Fleenor (1997) measured the academic performance of high school student athletes by analyzing standardized test scores, also concluding that no relationship exists. Other research found no effects of athletic participation on GPAs but found negative effects on standardized test scores (Eitle & Eitle, 2002).

The Relationship Between the In- and Out-of-season Effects on Academics

Although the research provides conflicting results about the relationship between athletics and academics, if participation in school sports affects academic performance the effects would likely manifest in differences in academic performance in- and out-of-season. It is therefore necessary to examine these different viewpoints with more scrutiny, to specifically examine the in- and out-of-season effects of participating in school sports on academic performance, and to highlight emergent themes gleaned from the literature. Thus, the primary focus of this section will examine if student-athletes perform better academically while their sports are in season. The earliest studies tend to support positive in-season effects on academic performance (Jacobsen, 1931) although the results are mixed, and there remains a few schools of thought on this issue. One practical theory is that student-athletes would perform better academically during the off-season since they would have more time to study and to focus on academics. Conversely, the structures and added attention from coaches and parents during the season of play may lead to more effort and better academic performance as opposed to the off-season (Sheldon & Watson, 2011). Another idea is that the season of play would have no influence on academic outcomes if the right supports are in place (Monda et al., 2015). It is also important to note that attendance of sports activities during the off-season is viewed differently by coaches and players and is perceived more as mandatory among players, which may lead to added demands and stressors during the off season (DiSanti, 2015).

The Negative In-season Effects of Sports Participation on Academic Achievement

There is a very limited amount of research on the specific in- and out of season effects of athletic participation on academic performance. Most of the negative findings were associated with time. Schultz (2015) found that English and history scores were lower during the athletic season than math and science due to the additional out-of-class demands of those courses such as

writing essays. The suggestion that time demands of the sport while in season contribute to academic underperformance is supported by research that the higher profile the sport (i.e. football), the lower the grades of the players were during the season (Scott et al., 2008). However, a study by Dubuc-Charbonneau, Durand-Bush, and Forneris (2014) concluded that fewer than 2% of student-athletes at two universities reported high levels of burnout as measured by emotional and physical exhaustion, sport devaluation, and reduced sense of accomplishment. Student-athletes have also reported higher levels of stress during the off-season (DiClementi, Reese, & Borsa, 2017).

The Positive In-season Effects of Sports Participation on Academic Achievement

As early as the beginning of the 20th century, research concluded that academic performance among student-athletes was better while the sport was in season (Jacobsen, 1931). Other researchers have more recently found positive effects of in-season play on academics. During the season, students were found to have higher attendance rates (Siegenthaler, 2001; Silliker & Quirk, 1997) and higher grades (Laughlin, 1978), which may be attributed to the higher levels of self-determination (Amorose et al., 2016) and more social supports reported by players while in season (Defreese & Smith, 2014). Foye (2018) recently found positive in-season effects among high school student athletes when examining GPA, attendance, and discipline referrals. However, the data were descriptive and not tested for significance. The qualitative element of the study revealed that coaches overwhelmingly perceive that student-athletes perform better academically and behave better while the sport is in season.

No In-season Effects of Sports Participation on Academic Achievement

Further research indicates no difference in academic performance in or out of season (Emmons, 1994; Hadfield, 2017; Valleser, 2014). Due to a lack of current research and

conflicting results of existing research, the in- and out-of-season effects on academic performance depends upon three key variables that emerged from the review of literature: race, type of school, and level of sport.

Race. Yeung (2015) found that white students benefit more from athletic participation than African-American or Hispanic students, and strong athletic identities among African-American males have negative effects on academic outcomes (Howard, 2013). African-American student-athletes in high profile sports have significantly lower academic performance when compared to their athletic peers (Harris et al., 2016), which may be attributed to being academically disadvantaged (Rubin, 2016). Athletic participation alone does not benefit African-American students-athletes academically, but participation in sports in conjunction with the right support systems produces positive academic outcomes (Monda et al., 2015).

Type of school. The type of school also controlled for the effects of in-season play. Within colleges, perceptions of overall school climate among student-athletes had a significant relationship with academic achievement, athletic success, and athletic identity (Robst & Keil, 2000). Similar results were found in high schools but only in middle- and low-income high schools (Hwang et al., 2013).

The level of play. Many methods of measure have been used to examine in- and out-of-season effects on academic performance including surveys, grade point averages (GPA), grade weighted averages (GWA), annual yearly progress (AYP), as well as ACT and other standardized test scores. The results all yield similar findings that the higher level of sport played, the greater the negative effects were on academic outcomes. The only exceptions to these findings were Monda et al. (2015) who controlled for the negative effects of in-season play through autonomy supports, and Bailey and Bhattacharyya (2017) who found that these negative

effects were offset by teams with winning records and high rankings. Winning teams receive more monetary supports in the form of donations, which supports student-athletes athletically and academically (Reynolds, Mjelde, & Bessler, 2017).

Summary

As the popularity of school sports continues to grow in participation and exposure (Burgess, 2007; Fuller, Lawrence, et al., 2017; Gehring, 2004; NFHS, 2017), it is important to analyze the effects of this increased exposure on the athletic and academic identities of student-athletes at all levels of play, especially in secondary school sports that are becoming more commercialized (Ferry, 2014). Coaches must also recognize the need for academic and structural supports for student-athletes (Monda et al., 2015) as well as the positive effects of establishing and maintaining high academic expectations (Laforge & Hodge, 2011; Vidal-Fernández, 2011). Nichols (2017) examined student-athletes' athletic and academic performance and found that high athletic performers generally perform higher academically despite having the same academic experiences as low academic performers. This may be attributed to individual characteristics such as personal motivation, but it is also likely that higher athletic performers receive more attention and autonomy supports. However, the same research concluded that growth mindset towards athletics and academics was observed among all student-athletes in the sample, which led to academic gains and personal development.

The effects of in-season play on athletic performance increases significantly at higher levels of play and the higher profile the sport is. In-season demands of time and athletic identities have been observed to be major contributors to this negative relationship. However, student-athletes among winning teams have stronger academic identities across all levels of play, and no effects of in- and out-of-season play on academic performance were observed. This may

be attributed to more supports and tangible resources among reputable athletic programs (Reynolds et al., 2017; Won & Chelladurai, 2016). Moreover, when organizations at all levels provided adequate support systems and high expectations, there were no negative effects on in- and out-of-season play on academic outcomes. Further research is needed to examine the effects of student-athletes transitioning to higher levels of play. Although higher levels of play and higher profile sports have a negative relationship with academic outcomes during the athletic seasons, coaches and school administrators can minimize the effects by establishing adequate support systems and maintaining high academic expectations for student-athletes.

Among many studies, the results are mixed, but the majority of Division I athletes attribute participating in varsity sports to lower GPAs while in high school (Potuto & O'Hanlon, 2007). There is conflicting research on the relationship between the effects of athletic participation on academics at the collegiate level and few studies at the secondary school level. Schultz (2015) conducted the leading study of the in- and out-of-season effects among high school student-athletes and referred to the relationship between athletics and academic as, "somewhat of a black box" (p. 183). The recommendation of this leading study was for more research to be done at the high school level to better understand this phenomenon. The problem is that studies yield conflicting results about the relationship between athletics and academics, and research by Hadfield (2017), Ritchie (2012), and Schultz (2015) suggests that the in-season effects on academic performance is significant and positive at the middle school level and gradually transitions to negative effects at higher levels of play. High school student-athletes are in the center of this transition period based on playing sports at the secondary level and due to being at different developmental stages. While studies have examined in-and out-of-season effects on academics at the collegiate level, very few studies have been conducted the secondary

level. Data gleaned from studies at the secondary level yields conflicting results and fails to determine if the in- and out-of-season effects of participating in sports on academic performance is significant among high school student-athletes. Foye (2018) recently conducted a mixed methods study to examine in- and out-of-season effects on the academic achievement of high school student-athletes. The results show positive in-season effects on GPA, attendance, and discipline referrals. However, the data was limited to descriptive statistics and did not test for normality, significance, or effect size.

The existence of autonomy supports within athletic programs and academic institutions has positive effects on athletic and academic identities. Moreover, autonomy supports facilitate higher levels of self-efficacy and academic performance gleaned from self-determination theory. Constructivist theory emphasizes the psychological power of human beings to construct knowledge and alter their environments (Schunk, 2016). Within Lev Vygotsky's (1997) sociocultural theory, elements of social interactions influence how human beings construct knowledge and self-identity. Student-athletes are particularly susceptible to these influences because they simultaneously develop academic and athletic identities as their involvement in school and school sports progresses. They are also susceptible to the influence of group identity throughout this developmental process (Fuller, Harrison, et al., 2017). While many variables influence the academic performance of student-athletes at all levels of play, adequate autonomy supports have shown to minimize negative effects of in-season play.

Self-determination theory is consistent with constructivism and sociocultural theory because it focuses on the influence of positive mentorship for student-athletes throughout the developmental process (Sheldon & Watson, 2011). The positive results have included increased academic achievement and has offset the influence of group identity with non-athletic or

negative peers by building intrinsic capacities. Since elements of autonomy supports include mentorship, tutoring, and parent involvement, student-athletes are likely to perform higher academically while in season due to the increased positive attention as opposed to the off-season when they are more susceptible to group identity with their non-athletic peers and when there is a decrease in supports. This difference will likely manifest itself in different levels of academic performance depending upon the season of play, and this study will determine if a significant difference exists between in-season academic performance and out-of-season academic performance of student-athletes in a low-income high school.

CHAPTER THREE: METHODS

Overview

The purpose of this study was to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of low-income high school student-athletes. Chapter 3 encompasses the design of the study, the research question and null hypothesis, a detailed description of the participants, and the validity and reliability of the instrumentation. This chapter concludes with the procedures for the study and a detailed description of how the data will be analyzed.

Design

This study used a repeated measures design to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of student-athletes in a low-income high school. According to Green and Salkind (2016),

For a repeated-measured design, a participant is assessed on two occasions or under two conditions on a single measure. The first variable includes the score on the measure on the first occasion or condition, and the second variable includes the score on the measure on the second occasion or condition" (p. 121).

A repeated measures design was selected for this study because the single measure of GPA is used to assess academic performance under one condition while in-season and on another condition while out-of-season. This design was also selected for this study because the study is ex post facto and assumes that the "presumed cause" has already occurred (Rovai, Baker, & Ponton, 2013, p. 83). Moreover, the archival data of academic performance was also readily available. The independent variable for this study is in- and out-of-season athletic participation. In-season is defined as the dates in which the respective sport begins and ends competitive play

according to the SCHSL (2018), and out-of-season is likewise defined as the dates in which the sport is outside of the dates of competitive play. The dependent variable in this study is academic performance as measured by GPA. In a repeated measures design “data are collected at two points in time” (Gall et al., 2007, p. 431). Each participant has two GPAs consisting of semester 1 (S1) and semester 2 (S2). The students’ semester 1 GPAs (while in session) were compared to the students’ semester 2 GPAs (while out of session) for fall sports, and semester 1 GPAs (while out of session) were compared to the students’ semester 2 GPAs (while in season) for spring sports. A repeated measure design was used to analyze the data using a paired samples *t*-test. A paired samples *t*-test is appropriate when a participant is assessed on two occasions or on a single measure, and according to Green and Salkind (2016), “In the SPSS data file that is created to conduct a paired-samples *t*-test, each participant has scores on two variables” (p. 121). This study analyzed the data using a paired samples *t*-test. According to Warner (2013) this method is preferred when the group composition is within subjects (within-S) and when “each participant is a member of every group” (p. 21). Average GPAs were calculated for all core classes. Core classes include the subject areas of mathematics, English, language arts, social studies, and science. The use of semester GPAs has been the preferred method of measure for numerous studies (Hadfield, 2017; Schultz, 2015; Sitkowski, 2008).

Research Question

RQ1: Is there a difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play?

Hypothesis

The null hypothesis for this study is:

H₀₁: There is no statistically significant difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play.

Participants and Setting

Archival data used in this study was gathered from a population of high school student-athletes located in a rural area of a southern state during the 2017-2018 school year. The school district was a low-income school district, and the high school was the only high school in the district. Low-income is defined as qualifying for federal funding under Title I of the Elementary and Secondary Education Act. Convenience sampling was used to identify all student-athletes in the high school among the student population from grades nine through twelve. Convenience sampling is the preferred method because the archival data of the student-athletes is readily available. Student-athletes are defined as students that participated in a complete season of a school-sponsored sport recognized by the SCHSL (2018).

Upon approval from the district superintendent, the sample was provided by the district athletic director. The final data were stripped of all identifiers such as student names and numbers before being provided to the researcher by the technology department in an electronic CSV file. For this study, the academic performance of 130 student-athletes was examined. According to Gall et al. (2007), a minimum of 52 student-athletes is required for a medium effect size with a statistical power of .7 at the .05 alpha level. This sample was selected because the archival data was readily available and provided for an adequate sample size. The academic scores of 19 student-athletes who participated in year-round sports, sports that cross into both semesters, or who played more than one sport were removed from the study to yield accurate results to measure in- and out-of-season effects as determined by GPAs.

Data provided by the athletic director included grade level, name of sport played, level of sport played (i.e. junior varsity or varsity), age, gender, and race. Prior to the names being removed and prior to the researcher receiving the athletic data, the district technology department provided the semester 1 (S1) and semester 2 (S2) GPA averages. The data was secured by the researcher on an encrypted drive.

A total of 130 student-athletes were included in the study. This natural occurring group included 88 males and 42 females. Sixty student-athletes were identified as junior varsity athletes with an average age of 15.3 years, and 44 were identified as varsity athletes with an average age of 17.1 years. The numbers for junior varsity and varsity totaled less than 130 because track, golf, and tennis do not differentiate between junior varsity and varsity. Among the total sample, 76 were Caucasian, 45 African-American, 4 multiracial, 3 Hispanic, and 2 Asian. Among Caucasians 45 were male and 31 were female, African-Americans 36 male and 9 female, multiracial 2 male and 2 female, Hispanics 3 male and 0 female, and Asian 2 male and 0 female (see Table 1). Specifically, these student-athletes were selected because they participated in a complete athletic season of a sport in which the athletic season was completed within a single semester of the school-year, and in which the student-athlete did not play another sport during the same school year.

Table 1

Demographics of Student-athletes in the Sample

Student-Athletes	Gender	Race	Gender by Race
130	Male: 88 Female: 42	Caucasian (C): African-American (AA): Multiracial (M): Hispanic (H): Asian (A):	76 45 4 3 2 C: Male 45 Female 31 AA: Male 36 Female 9 M: Male 2 Female 2 H: Male 3 Female 0 A: Male 2 Female 0

Year-round sports and sports that crossed into two semesters were removed from the sample. Nine sports were included in the study (see Table 2).

Table 2

Number of Student-athletes by Sport

Fall		Spring	
Football:	44	Baseball:	11
Tennis (Girls):	9	Golf:	2
Volleyball:	8	Soccer:	31
		Softball:	10
		Tennis (Boys):	8
		Track:	7

Instrumentation

A comparison of the in- and out-of-season GPAs of student-athletes was the most appropriate measure for this study. The purpose of this method of measure was to examine differences in the academic performance in and out of the respective seasons of play. In this study, the GPAs of student-athletes were considered an appropriate source of measure to determine the in- and out-of-season effects of athletic participation and was a valid measure of differences in academic performance used in previous research. A comparison of the GPAs of student-athletes has been the primary method of measure of academic performance for numerous studies (Bailey & Bhattacharyya, 2017; Hadfield, 2017; Levine et al., 2014; Monda et al., 2015; Schultz, 2015; Scott et al., 2008; Valleser, 2014). Only semester 1 (S1) and semester 2 (S2) GPA averages were used for single-sport student-athletes that participated in a sport that was completed in its entirety during a single semester.

All core courses taken during and outside of the seasons of play were equally factored into the GPA. Moreover, student-athletes' academic course-loads were not influenced by their

athletic participation. As a matter of school policy, all teachers within the school were required to submit grade distributions at the end of every 9-week period to mitigate grade inflation. This level of control helped to ensure the reliability of using GPAs as the primary measurement for this study. GPAs are measured on an unweighted 4.0 scale (see Table 3).

Table 3

Letter Grades Associated with GPA

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Percentage	100- 94	93- 90	89- 87	86- 84	83- 80	79- 77	76- 74	73- 70	69- 67	66- 64	63- 60	59- 0
GPA	4.0	3.67	3.33	3.0	2.67	2.33	2.00	1.67	1.33	1.00	0.67	0.00

By using the unweighted scale, the researcher was able to control for Advanced Placement (AP) courses that are measured on a 5.0 scale. PowerSchool reports courses on a 5.0 scale (i.e. AP courses) as *SC_GPA_UGP_Round* whereas true unweighted GPAs on the 4.0 scale (including AP courses) are reported as *SC_GPA_4.0_Round*. This study only used the calculation of GPAs where student-athletes were all on the unweighted 4.0 scale to provide for equality of measurement. Therefore, student-athletes' average GPA during the season of play was compared to the average GPA out of the season of play using repeated measures paired samples *t*-tests on the unweighted 4.0 scale.

Procedures

Permission from the institutional review board (IRB) to begin research was sought and approved prior to collecting data, and a written letter of approval was provided to the researcher (see Appendix for IRB approval letter). The researcher provided the district superintendent a letter explaining the purpose of the study, and written approval to conduct this study was

provided to the researcher prior to the researcher collecting data. Thereafter, the researcher coordinated with the district athletic director to identify single-sport student-athletes who completed the entire season of a sport and in which the sport's season was completed in a single semester. The researcher ensured that other pertinent data were provided in the list including the name of sport played, the level of sport played, grade level, age, gender, and race. A list including the students' names was provided by the athletic director directly to the district technology office. The technology office used the students' names to add the semester 1 (S1) and semester 2 (S2) averages for core classes for each student-athlete. Names were omitted to protect the privacy of students before the final data were provided to the researcher by the technology office. The data were downloaded in CSV format by the technology office and given to the researcher. The researcher secured the data on an encrypted drive. The data were then input into SPSS and analyzed using repeated measures paired samples *t*-test to determine the differences in GPAs in and out of the respective seasons of play.

Data Analysis

According to Warner (2013), the paired samples *t*-test should be used when the data comes from a "within-subjects (within-S) or repeated measures design" (p.186). The *t*-test is also the preferred method of determining the "statistical significance of an observed difference between sample means" (Gall et al., 2007, p. 139). Since this study compares the GPAs in- and out-of-season of within subjects, the data analysis was conducted using paired samples *t*-test to determine the differences in the GPAs of student-athletes in and out of the respective seasons of play. The dependent variable (GPA) meets the *t*-test level of measurement assumption as GPA is ratio-based from 0.0 to 4.0, and the observation within each variable are independent. The data were input into IBM SPSS Statistics 24.

The data were first screened for missing data points, and incomplete entries were omitted. Subsequent data screening was conducted using box and whisker plots to detect outliers (Rovai et al., 2013). With a sample size greater than 50, assumption of normality was tested using a Kolmogorov-Smirnov test for normality where normality was assumed, and assumption of equal variance was tested using Levine's Test of Equality of Equal Variance (Gall et al., 2007). The paired samples *t*-test was run with an alpha level of .05. Effect size was reported using Cohen's *d* (Warner, 2013).

CHAPTER FOUR: FINDINGS

Overview

This chapter is sequenced by identifying the research question and null hypothesis, descriptive statistics, and results of the analyses. To measure the effects of athletic participation while in- and out-of-season on the academic achievement of high school student-athletes, box plots were used to detect outliers, Kolmogorov-Smirnov test for normality, Cohen's d for effect size, and a paired samples t -test for statistical significance.

Research Question

RQ1: Is there a difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play?

Null Hypothesis

H₀₁: There is no statistically significant difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play.

Descriptive Statistics

The dependent variable for this study is academic performance as measured by GPA in core classes, and the independent variable is in- and out-of-season athletic participation. The descriptive statistics for the independent variables are represented in Table 4. Table 5 includes descriptive statistics GPA based on the level of the sport played for. Similarly, Table 6 includes descriptive statistics for difference in GPA based on gender. Difference in GPA was determined by comparing in season GPAs with out of season GPAs.

Table 4

Descriptive Statistics for GPA While In and Out of Season

	<i>M</i>	<i>N</i>	<i>SD</i>	Std. Error
In-Season GPA	3.1779	130	.65950	.05784
Out-of-Season GPA	3.1038	130	.71917	.06308

Table 5

Descriptive Statistics for Difference in GPA Level of Sport Played

	<i>M</i>	<i>N</i>	<i>SD</i>	Std. Error
Varsity	.0854	60	.33533	.04329
Junior Varsity	.0970	44	.45810	.06906
Immaterial	.0090	26	.44764	.08779
Total	.0740	130	.40163	.03523

Table 6

Descriptive Statistics for Difference in GPA Gender of Student-Athletes

	<i>M</i>	<i>N</i>	<i>SD</i>	Std. Error
Male	.0873	88	.40657	.04334
Female	.0461	42	.39446	.06087
Total	.0740	130	.40163	.03523

Results

The data were collected and screened for inconsistencies. The initial screening omitted dual-sport athletes, student-athletes who participated in a sport that crossed into both semesters, and student-athletes who did not complete the entire athletic season. Among the 149 student-athletes remaining, 130 were determined to be eligible for the study after final screening was completed for core classes in each of the semesters. Outliers were screened for using box plots,

and no outliers were detected. Figure 1 illustrates the box plot for in-season GPAs, and Figure 2 illustrates out-of-season GPAs among the student-athletes. Figure 3 illustrates the difference in mean GPAs while in season compared to out of season.

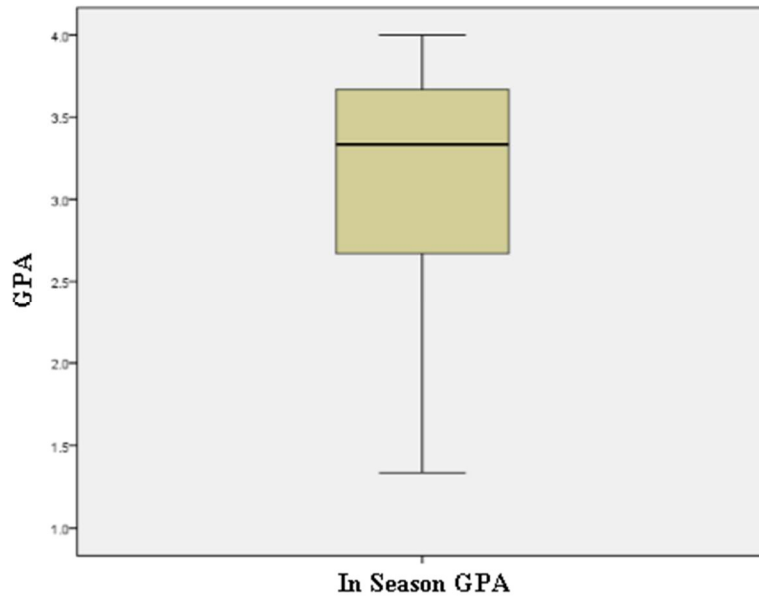


Figure 1. Box plot for In Season GPA

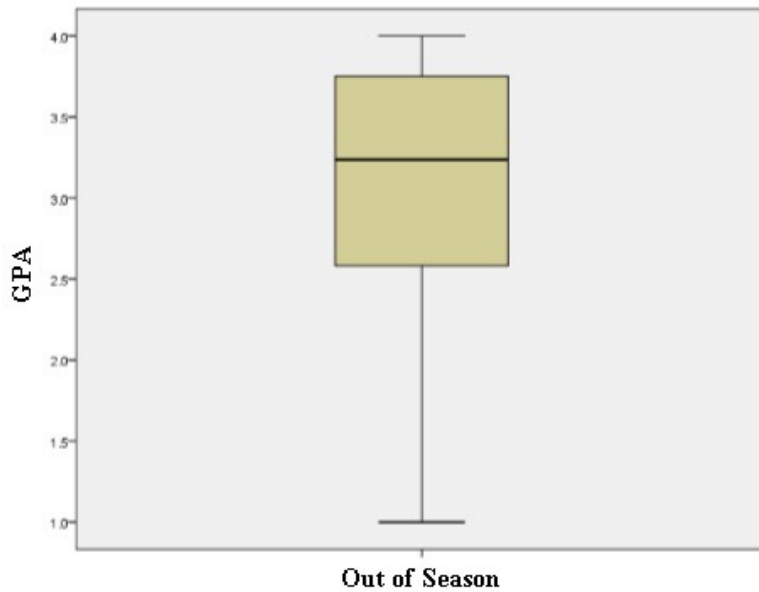


Figure 2. Box plot for Out of Season GPA

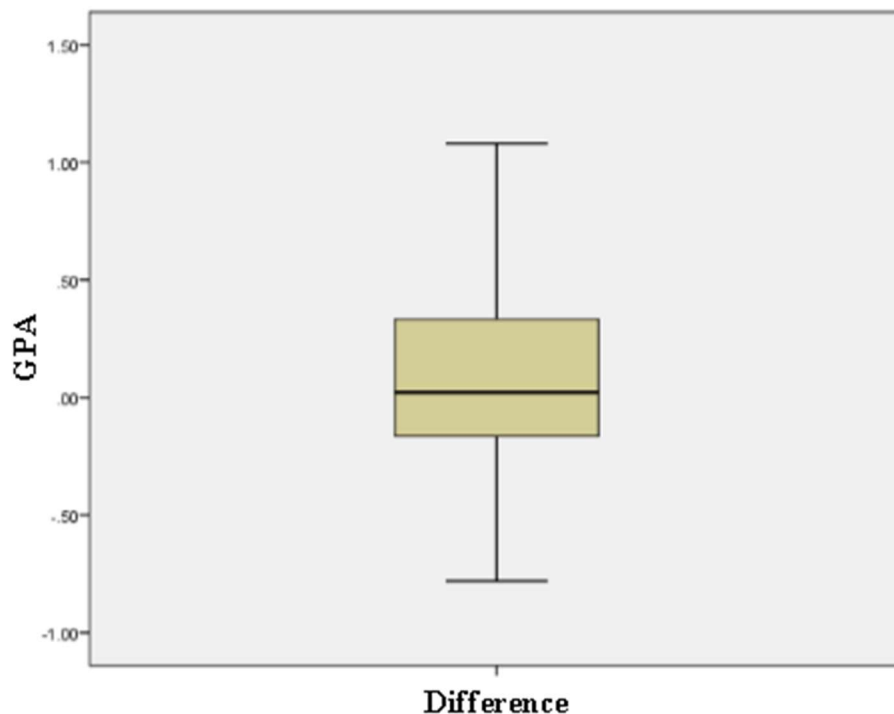


Figure 3. Box plot for Difference in GPA

Assumption Testing

Since a paired samples *t*-test was used for the analysis and the sample size was greater than 50, a Kolmogorov-Smirnov test was used to assess normality of distribution where normality was assumed. The differences between the academic performance of student-athletes while in season as compared to out of season was normally distributed as assessed by Kolmogorov-Smirnov test ($p = .200$) and is indicated in Table 7.

Table 7

Kolmogorov-Smirnov Test for Normality

	Statistic	df	Sig.
Difference	.068	130	.200*

*. This is a lower bound of the true significance.

Null Hypothesis

The null hypothesis states that there is no statistically significant difference in academic performance as measured by GPA of high school student-athletes based on in- and out-of-season of play. This hypothesis was tested using a paired samples *t*-test. The independent variable was athletic participation while in- and out-of-season, and the dependent variable was academic performance as measured by GPA in core classes. The results for in-season GPA are ($M = 3.1779$, $SD = 0.65950$), and results for out of season GPA are ($M = 3.1038$, $SD = 0.71917$). A $p < .05$ was required to reject the null hypothesis. In season athletic participation elicited a mean increase in GPA of 0.074, 95% CI [0.004, 0.144] compared to the off season. Athletic participation while in season elicited positive and significant results on academic achievement as compared to the off season, $t(129) = 2.101$, $p = 0.038$. There is a statistically significant difference between means ($p < .05$), and therefore, we can reject the null hypothesis. A small effect size was found using Cohen's d where $d = 0.7402 / 0.40163 = 0.184$.

CHAPTER FIVE: CONCLUSIONS

Overview

This chapter begins with a brief overview of the contents of the conclusions of the study. Subsequent sections of this chapter include discussion, implications, limitations, and recommendations for further research.

Discussion

The purpose of this repeated measures study was to determine if a significant difference exists between in-season academic performance and out-of-season academic performance of student-athletes in a low-income high school as measured by paired samples *t*-test. The theories that guided this study were constructivism theory (Schunk, 2016), sociocultural theory (Vygotsky, 1997), and the theory of self-determination (Ryan & Deci, 2016) as they relate to the development of self-identity and academic performance among student-athletes. These theories build on each other and led the researcher to formulate the null hypothesis. The results of the null hypothesis are in the subsequent section of this chapter.

The exogenous perspective of constructivist theory provided the first rational basis for the theoretical framework of this study where external environmental influences (Schunk, 2016) such as school-climate have influenced the development of self-identity among student-athletes (Rankin et al., 2016). Since there is a direct relationship between self-identity and academic achievement (Booth et al., 2017; Harris et al., 2016; Yeung, 2013), the researcher had to consider other variables that contribute to the development of identity. The endogenous perspective of constructivist theory accounts for how identity development translates into tangible outcomes such as effort and academic achievement. That is, students who do not identify as smart students will likely produce substandard results as a byproduct of their own levels of self-efficacy. This

is supported by research from Hwang et al. (2013), finding that the internal influences of self-identity among student-athletes significantly related to levels of academic achievement. Thus, the relationship between external and internal influences on identity development and academic achievement of student-athletes can best be explained by the dialectical perspective of constructivism that accounts for the roles of both environmental and psychological factors. The findings of this study are consistent with this theory in that student-athletes' GPAs were higher during the season of play.

Within the dialectical model of constructivism, sociocultural theory deals with how social interactions with peers and adult figures are deeply rooted in individual cultural development and become engrained individuals' mental structures (Vygotsky, 1997). The findings of this study are consistent with Sociocultural Theory in that student-athletes performed better academically during the season of play as opposed to the off season. Since negative public perceptions about the academic abilities of student-athletes often influence their self-identities (Levine et al., 2014; Wininger & White, 2015), the researcher considered that the same perceptions could influence the cultural identity of student-athletes as a whole, and that the desire to adhere to cultural norms may negatively affect academic outcomes. While this was not a point of contention within this study, it was part of the framework for the development of the null hypothesis. That is, constructivism accounts for the intrinsic and extrinsic influences on the development of self-identities and the role(s) of self-identity on academic achievement among student-athletes, and sociocultural theory likewise accounts for these influences and how they relate to the development of culture among groups. This led the researcher to question how the influence of the athletic seasons would affect academic achievement.

To better understand the question, self-determination theory was examined to glean insights into other potential influences on the development of self-identity as they relate to tangible outcomes such as effort and academic achievement. Since group culture can have negative effects on the development of strong academic identities among student-athletes (Fuller et al., 2017a; Howard, 2013), self-determination theory uses mentorship from positive adult figures and autonomy supports to yield positive effects on self-identity, effort, and academic achievement (Keshtidar & Behzadnia, 2017; Monda et al., 2015; Ryan & Deci, 2016). Since systems of support and positive attention from coaches and other adult figures are likely more prevalent during the respective athletic seasons as opposed to the off season, self-determination theory provided the final framework to establish the null hypothesis and ultimately concluded that student-athletes performed better academically during the athletic seasons.

Specifically, self-determination theory addresses how autonomy supports from positive adult figures have been instrumental in shaping identity development, personal goals, and driving the levels of work ethic among young students (Keshtidar & Behzadnia, 2017; Ryan & Deci, 2016; Sheldon & Watson, 2011). Due to the natural occurrence of student-athletes receiving more attention from coaches and family members during the athletic season, it was plausible that this phenomenon could manifest itself in different levels of academic performance while in season as compared to the off season.

While the time demands of athletic participation have had negative effects on academic achievement while in season (Owens, 2016; Scott et al., 2008; Whitsell & Naquin, 2016), the positive effects of autonomy supports that occur naturally while in season have transcended the negative effects of high time demands and other variables. For example, among high revenue sports that generally have negative in-season effects on academic achievement, Harris et al.

(2018), Parker et al. (2016), and Won and Chelladurai (2016) found that the implementation of adequate systems of support among coaches and institutions controlled for almost all variables that have shown to have negative in season effects on academic achievement.

Few studies have been conducted at the secondary level to measure this specific relationship. Others have concluded that race (Harris, 2016; Howard, 2013; Yeung, 2013), climate of school (Hwang et al., 2013; Robst & Keil, 2000); level of play (Bailey & Bhattacharyya, 2017; Monda et al., 2015; Reynolds et al., 2017) were significant variables within the relationship between athletic participation and academic achievement. The findings of this study support a positive relationship between in season athletic participation and academic achievement among high school student-athletes. The findings further support the positive effects of self-determination theory on work ethic and academic achievement that transcend other variables.

Null Hypothesis

The null hypothesis provided the framework to test the differences in academic achievement among high school student-athletes while in and out of season. A paired samples *t*-test was used, and statistically significant results were found. The results led the researcher to reject the null hypothesis at $p = 0.038$, finding that student-athletes performed significantly better academically while their sports were in season as compared to the off season.

The time demands of athletic participation have shown to be the greatest factor effecting in-season academic performance of student-athletes. Lower in-season GPAs have been found among student-athletes playing higher profile sports (Scott et al., 2008) and taking courses that require extensive time to study and write essays (Schultz, 2015). Moreover, student-athletes have reported being more stressed during the athletic season (DiClementi, Reese, & Borsa,

2017). However, this study supports research by Amorose et al. (2016), Siegenthaler (2001) and Silliker and Quirk (1997) in that student-athletes in-season play had positive effects on academic achievement. The findings of this study and particularly the effects of self-determination theory are consistent with research by Defreese and Smith (2014) and Monda et al. (2015) who found that student-athletes receive more supports while in season.

Although research indicates that the level of play and the demands of time may control for the effects of the athletic season(s) on academic achievement (Hadfield, 2017; Ritchie, 2012; Schultz, 2015), the overall finding of this study supports research by (Foye, 2018; Jacobsen, 1931; Laughlin, 1978; Siegenthaler, 2001; Silliker & Quirk, 1997) that the general relationship between in-season play and the academic achievement of student-athletes is positive and significant.

Implications

Since the majority of research examining the effects of the athletic seasons on the academic achievement of student-athletes has been conducted at the collegiate level, the effects on academic performance among high school student is largely unknown (Emmons, 1994; Foye, 2018; Hwang et al., 2013; Schultz, 2015). Although an examination of studies tend to support a gradual movement from positive in-season effects to negative in-season effects from middle school sports to higher profile college sports (Hadfield, 2017; Ritchie, 2012; Schultz, 2015), the secondary level is a critical transition point that remains understudied. This study therefore sought to add to existing literature by determining if there is a difference in academic performance among high school student-athletes based on the season of play.

Since, this study found positive in-season effects on the academic achievement among high school student-athletes, future research should be conducted to glean insights into variables

that contribute to this difference. Although previous studies found that the effects of time and the level of sport played on academic achievement were significant, the effects of autonomy supports proved to have the most positive and significant effects among student-athletes at every level (Amorose et al., 2016; Monda et al., 2015; Sheldon & Watson, 2011). Given that this study found positive and significant in-season effects on the academic achievement of high school student-athletes, future research at the secondary level should examine the effects of different levels of autonomy supports on academic achievement. Results of this study support the need for adequate mentorship from coaches and parents, academic support systems, and policies that support student-athletes academically.

Limitations

The findings of this study cannot be generalized beyond this study. Although the findings of this study were statistically significant and rejected the null hypothesis, it is limited in many regards. A discussion of limitations provided below.

The use of GPA as a dependent variable is debated in the literature. This study was limited to a sample size of 130 students. Although the sample size was adequate and demographically diverse, all of the student-athletes were from the same geographical area and specifically sampled from within the same school, which is the only high school in the district. The school was also considered a low-income school and was therefore limited in the ability to factor for income level(s) as a potential variable. This study lacked randomization and was not a true experimental or quasi-experimental design.

This study assumed that the levels of autonomy supports was naturally higher while the respective sports were in season, but it did not measure the levels of support or account for specific academic support programs for student-athletes. Time was a limiting factor in the study

in two ways. Academic data for this study was limited to the semester in which the sport was played in its entirety and then compared to the semester that the sport was out of season.

Although all sports encompass at least 70% of the semester, some sports have longer seasons than others, and the overall data is not longitudinal as it was limited to one school year.

The effects of time demands for each individual sport was also not considered as a method of measure. Although it was assumed that varsity sports were more demanding of time than junior varsity, this was not always the case. The limitations of this study was used to guide the recommendations for future research.

Recommendations for Future Research

1. Future research should examine the effects of athletic seasons on academic achievement on a broader scale and among more diverse groups.
2. This type of future research should be used to build longitudinal data to glean further insights into this phenomenon.
3. Research should include experimental designs that examine the effects of specific programs and autonomy supports consistent with self-determination theory.
4. Qualitative methods may also glean insights into unique perspectives among student-athletes that could guide future quantitative studies.
5. Researchers should use more refined analytical methods that more accurately measure the effects of the athletic seasons on academic achievement by controlling for the specific times that the sports are in season and thus control for the time demands of each individual sport.
6. As popularity and commercialization of high school sports continue to grow, the effects of time demands and identity development will likely be exacerbated, and future research

should be conducted as to glean data that will guide practices aimed at mitigating the potential negative effects and realizing the positive effects of participating in high school sports on academic achievement.

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APPENDIX

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

May 17, 2019

Toney L. Farr Jr.,
IRB Application 3830: In Season and Out of Season Academic Performance of Secondary
School Student-Athletes

Dear Toney L. Farr Jr.,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application's status, please email us at irb@liberty.edu.



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